



## **AEP Ohio gridSMART<sup>SM</sup> Demonstration Project**

### **Project Description**

AEP Ohio and its partners are building a secure, interoperable, and integrated Smart Grid infrastructure in Ohio that demonstrates the ability to maximize distribution system efficiency and reliability, and consumer use of demand response programs to reduce energy consumption, peak demand costs, and fossil fuel emissions. The demonstration area includes 150 square miles including parts of Columbus, Bexley, Gahanna, New Albany, Whitehall, Reynoldsburg, Westerville, Blacklick, Johnstown, Alexandria, Minerva Park, and Pataskala. This area includes approximately 110,000 meters and 70 distribution circuits. AEP Ohio will implement Smart Grid technology over 58 13kV circuits from 10 distribution stations and 12 34.5kV circuits from six distribution stations. Included in this project is a redistribution management system, integrated volt-VAR control, distribution automation, advanced meter infrastructure, home area networks, community energy storage, sodium sulfur battery storage, and renewable generation sources. These technologies will be combined with two-way consumer communication and information sharing, demand response, dynamic pricing, and consumer products, such as plug-in hybrid vehicles.

### **Goals/Objectives**

- Reduce energy demand by 15 MW; energy consumption by 18,000 megawatt-hours; CO<sub>2</sub> emissions by 16,650 tons; and save consumers an estimated \$5.75 million over the length of the project
- Improve distribution system efficiency and reliability by 30-40 percent
- Integrate more than 2 MW of storage resources into the existing grid

### **Key Milestones**

- Develop device and system models (December 2010)
- Incorporate models into system simulator (December 2010)
- Implement technology (May 2013)

### **Benefits**

- 500 jobs created
- Decreased energy costs, improved Smart Grid reliability, reduced energy consumption, lowered peak demand, and significantly reduced carbon emissions
- Lower risk of implementing new technologies into existing electrical networks
- Greater U.S. energy security from reduced oil consumption



### **CONTACTS**

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### **PARTNERS**

AEP  
Battelle  
General Electric  
Pacific Northwest National Laboratory

### **PROJECT DURATION**

01/01/10- 12/31/13

### **BUDGET**

#### **Total Project Value**

\$148,821,823

#### **DOE/Non-DOE Share**

\$73,660,317/ \$75,161,506

### **EQUIPMENT**

Reclosers  
Automated switches  
Capacitors  
Regulators  
Mesh radios  
DA logic software

### **DEMONSTRATION STATES**

Ohio  
CID: OE0000193

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